Recommendations for Consideration by the Blue Ribbon Commission on America's Nuclear Future

WGA Ad Hoc Committee on the Blue Ribbon Commission[1]

The Western Governors' Association (WGA) is composed of 19 Western states and three Pacific territories. Thirteen of these Western states[2] have been deeply involved with the implementation of the Nuclear Waste Policy Act (NWPA) over the past 25 years. On behalf of the Western states, the WGA has unanimously adopted policy resolutions that address the major provisions of the NWPA regarding storage, transportation and disposal of spent nuclear fuel (SNF) and high-level radioactive waste (HLW), as well as related activities of the U.S. Department of Energy (DOE) regarding cleanup of defense nuclear facilities.[3]

These WGA policy resolutions have been adopted and reconsidered at three-year intervals since the late 1980s and form the basis of previous WGA recommendations to the President's Blue Ribbon Commission on America's Nuclear Future (BRC). The President and the Secretary of Energy have charged the BRC to conduct a comprehensive review of current policies for the back-end of the nuclear fuel cycle and to make recommendations for a new plan, including additional legislation or amendments to existing laws. The governors agreed that WGA should form an Ad Hoc Committee to follow the BRC process and to develop additional recommendations to supplement existing policy based on the states' experience. The suggestions in this summary are consensus recommendations of the Ad Hoc Committee and will be forwarded to the governors for their consideration. In doing so, this group recognizes that the DOE has federal obligations to clean up its facilities under the NWPA, as well as agreements, which remain in force and require "specific performance," whether or not BRC recommendations include or result in legislative changes (See WGA Policy 08-5 and 09-5).

Our suggestions for BRC consideration are grounded in our collective experience with the Federal Nuclear Waste Policy Act (NWPA), the geography and timing of nuclear waste management, and in several principles critical to any national program.

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[1] State officials from California, Idaho, Nevada, New Mexico, Oregon, South Dakota, Utah, and Washington participated in the development of this white paper. The paper has not been endorsed by Western Governors and does not necessarily represent their collective of individual opinions.

[2] Arizona, California, Colorado, Idaho, Kansas, Nebraska, Nevada New Mexico, Oregon, Texas, Utah, Washington, and Wyoming.

[3] Relevant WGA policy resolutions include (see www.westgov.org/policies):

- 10-2: Assessing the Risks of Terrorism and Sabotage Against Spent Nuclear Fuel High-Level Waste Shipments
- 09-4: DOE Waste Isolation Pilot Plant and Transportation of TRU Waste
- 09-5: Interim Storage and Transportation of Commercial Spent Nuclear Fuel
- 08-4: Enhancing Security During Transport of Radioactive Materials in Quantities of Concern
- 08-5: Department of Energy Facilities Cleanup Program
- 08-6: Transportation of Spent Nuclear Fuel and High-Level Radioactive Waste

History

Much of the history of the NWPA has been played out in the West. In 1982, the NWPA called for a selection among alternative candidate repository sites in the West and the East as well as a monitored retrievable storage facility, which was expected to be sited on the Oak Ridge Reservation in Tennessee. In 1987, Congress abandoned the eastern storage site and focused the western process on a single state - Nevada. Congress also authorized a Nuclear Waste Negotiator to seek "voluntary" sites, all of which were in the West and many of which pitted tribal interests against state interests. In 2010, after submittal of a license application, the Administration discontinued its support for the Yucca Mountain Project and established the BRC to make recommendations for the back end of the nuclear fuel cycle. Because of DOE's 1985 decision to combine the disposal paths for DOE-owned wastes and commercial spent fuel, disposal of DOE-owned wastes is now as uncertain and unresolved as that for commercial SNF.

Geographic Considerations

The 19 Western states represented by WGA account for 66 percent of the total land area of the United States (59 percent when Alaska and Hawaii are excluded), and 35 percent of the 2010 resident population. According to the 2010 census, 107 million people reside in the WGA-member states. The Western states accounted for 48 percent of the entire nation's population growth between 1990 and 2010. More than 88% of the SNF at currently operating and shutdown reactor sites has been generated east of the 100th meridian, a line that extends across the Dakotas south through Texas and roughly corresponds to the region represented by the WGA. [4] More than 93% of the SNF from currently operating and prospective reactor sites will be generated east of the 100th meridian. Past implementation of the NWPA appeared to be more focused on the development of a program to transfer waste for storage or disposal in the West rather than a national program whose disposal, storage and transportation components are logically interrelated. This sense that the overall national program is incoherent and unfair has greatly complicated the relationship between federal or private program proponents and prospective host states.

The Timing and Sequencing of Nuclear Waste Components

Neglecting the need for an integrated program and the complexities of siting and transportation system design, a contract provision of the NWPA[5] implied that a permanent repository could and must be in operation within 16 years. Twenty-five years later, the lesson learned is that siting for permanent disposal should be deliberative and consensual, and that implementation of a licensed repository should be a process of "staged adaptation," in which even a license is not taken as final assurance that the facility will perform as predicted. A more deliberative process makes it possible for federal program managers to consider alternative configurations of disposal, storage and transportation components in an integrated nuclear waste management program. Siting of centralized storage before permanent disposal signals that centralized storage could become a de

[4] Roughly 65% of the DOE-owned high-level waste and spent fuel is located at Hanford (WA) and the Idaho National Laboratory, west of the 100th meridian.

[5] Section 302(a)(5)(B); "In return for the payment of fees, the Secretary, beginning not later than January 31, 1998, will dispose of the…… spent nuclear fuel involved as provided in this subtitle." The provision is the basis for court breach of contract decisions, but does not affect federal obligations under agreements with states, which require "specific performance."

facto permanent site. The assessment of the long-term safety of on-site storage should be a salient policy consideration. Near-site storage should be considered as a means to enable removal from shutdown and other priority sites (e.g. sites with high seismic hazard). The challenge is to design and implement an integrated national program, adhering to key principles as it proceeds over decades.

Implementation of Core Principles

WGA's policy 09-5 states that: "It is the objective of the Western Governors' Association (WGA) to support the options for the disposition of spent nuclear fuel, consistent with the principles of science, fairness, safety, environmental protection, and equity." The principles of sound science and safety should be embodied in rigorous standards, thorough and unbiased investigation, and scrupulous independent oversight and review. The principles of fairness and equity are also crucial. This summary focuses on steps to ensure these principles are reflected in a reformulated program in which sound science and safety are taken as givens. Funding from the Nuclear Waste Fund is appropriate in implementing these steps and robust public participation throughout is crucial.

An integrated national program, addressing principles of fairness

The NWPA did not consider several components of an integrated national program for the storage, disposal and transportation nuclear waste. For example, an integrated program must consider whether storage should be at one or more sites; whether SNF and HLW should be managed separately; whether storage should be publically or privately operated, or near reactor sites or centralized; or whether transportation should be short-haul or cross-country. These various program components are referred to as "alternative configurations." Going forward, we suggest the following features of a national program:

- More than one site should be nominated for each permanent disposal and centralized storage facility.[6] The on-site storage capacities of operating reactor sites should be determined and made public, for consideration in development of an integrated national program.
- Cross-country transport should be minimized until permanent disposal is operational. Centralized storage should not include incentives for reprocessing unless reprocessing is deemed economically feasible and does not increase the risk of weapons proliferation. Near-site storage options should be considered as a means to limit premature cross-country transport, and to maintain an integrated national rather than a regional transfer program.
- The development of an integrated, fair and equitable national program will require the identification and assessment of alternative configurations in the storage, transportation and disposal components of the program.

[6] The site selection criteria and selection process developed under the NWPA for the "second repository" provide a useful basis for these processes.

- In any course of action recommend by the Blue Ribbon Commission to manage the back-end of the nuclear fuel cycle, the following aspects should not be delegated to a private entity (WGA Policy 08-6, Policy #12):
    a. Interaction with states and tribes;
    b. Selection of transportation modes and routes;
    c. Preparation of environmental impact statements addressing transportation concerns;
    d. Selection of transportation casks;
    e. Working with states and tribes to develop acceptable transportation communication, training and security plans; and
    f. Decisions regarding the provision of adequate technical assistance and funding to states and tribes to prepare for shipments.

Equitable Dealing with Prospective Host States

- Federal program managers who perform with competence, transparency and integrity at each stage of the siting process are more likely to gain host-state consent than if they resort to a take-it-or-leave-it approach. Gaining host-state consent requires an institutionalized process keyed to the distinct phases in siting and implementing a centralized storage or a permanent disposal facility for SNF or HLW. WGA has taken the position that centralized interim storage, if deemed necessary, shall be located within a state only with the written consent of the governor (WGA 09-5, Policy #2). In the context of an integrated and fair national program, the principles of volunteerism and consent must apply to the siting of any storage and disposal facilities and will deliver the needed sites, assuming consistently competent, transparent and honest performance by federal program managers.
- Experience under the NWPA suggests that departure from these principles creates strife and costly delay, without reliably delivering the needed sites.
- The construction and operation of a licensed repository should be guided by a flexible, adaptive, transparent process founded on safety, such as the concept of "staged adaptation" proposed by the National Academies. [7]
- The prospective host state should have full monitoring and oversight capability and authority at each siting stage in licensing, state permitting (where applicable), and during implementation. It will be critical to involve a state in any permitting activity that addresses waste acceptance criteria and limitations on waste volumes and waste forms based on the total environmental risk posed from the disposal facility.
- In licensing, the prospective host state should have full authority to prepare and present its contentions. Licensing should proceed with the understanding that it is a necessary step, but not sufficient. The project must also demonstrate to the prospective host state that it is acceptable to the prospective host state.[8]

[7] Staged adaptation was proposed by the National Academies in their report "One Step at a Time" and in a 5/26/10 presentation by Kevin Crowley to the BRC.

[8] The federal program manager may be given schedule parameters for design of an integrated national program, conduct of siting in prospective host states, and system design for cross-country transport. If these schedules prove impracticable or counterproductive, the federal program manager should explain why and suggest remedies. If

Consultative Cross-Country Transportation System Design and Campaign Planning
Large-scale, cross-country transport of SNF/HLW affects many states and communities, raising concerns among citizens who do not directly benefit from the shipments or fully trust federal program managers. Federal managers *need* state governments at their side in proposing and implementing methods and priorities for SNF removal and transport.[9] Moreover, such transport involves complicated and interrelated issues (priorities and sequence, methods, authorities, routes) that require detailed assessment and evaluation, using tools that enable integrated assessment at any geographic level. Evidence from the successful WIPP transportation campaign indicates that the most effective approach is one based on "best practice" and as agreed to with affected state governments, not solely in the judgment of federal managers. Further, by avoiding contention and delay, and by reducing the risk of mishaps, accidents, and investigations, the more effective "best practice" approach is likely to be more efficient and less costly over time, in comparison to the alternatives, in removing SNF and transferring it cross-country to a permanent or centralized storage facility.

- The Blue Ribbon Commission should specifically address transportation and recognize that it is integral to the success of any plan for the back-end of the nuclear fuel cycle. Towards that end, the Governors have stated that commercial spent nuclear fuel should remain at the reactor site until:
    1. A permanent storage/disposal site is operational.
    2. DOE and the nuclear utility companies have worked with the corridor states to implement an acceptable transportation plan for shipping the waste to permanent storage or disposal sites.
    3. DOE and the nuclear utility companies have put into place adequate infrastructure capacity to handle, store and dispose of this waste.
    4. DOE, the U.S. Department of Transportation and the nuclear utility companies have ensured adequate state and local emergency and medical responder training and resources in case of an accident or terrorist attack while shipping this waste.
- The federal government should formally declare its intention to consult with affected state governments in SNF transportation system design and campaign planning, and to conduct SNF transport on a best-practice basis. The Governors and the Secretary of Energy have a Memorandum of Agreement recognizing that the regional planning process is the most effective way to facilitate agreement and a high level of safety. A large-scale shipment campaign must be "best practice," not only in the judgment of federal managers, but also as agreed to with affected state governments. Best practice should draw from the WIPP program as its foundation, and extra-regulatory measures should be considered and adopted. (WGA 08-6, Policies #3-11).
- Through the regional planning process, a large number of states have worked together to develop protocols and expectations for the transport of transuranic waste, spent nuclear

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consensual process, conducted with competence, transparency and integrity, is found to be a primary contributor to delay, alternative approaches may then be considered.

[9] For example, a 1991 Report to Congress noted that state-federal efforts in planning for shipments to WIPP had transformed the process, from polarized to partnership.

fuel and high-level waste that are broadly applicable (e.g. the implementation of 180(c) of the NWPA, which outlines necessary technical assistance and funding to states and tribes). Any future transportation effort should seek to build from areas where agreement has already been reached among states.[10]

- The federal agencies, working with states to design a transportation system, should receive full commitment and cooperation from the rail industry in implementing best practice SNF transport. It may be necessary for Congress or the DOE to explicitly address this, in order to provide a firm basis for SNF/HLW transportation system design.
- Public participation and information sharing must be robust in all aspects of transportation system design and detailed campaign planning.
- Specifically, in developing a transportation system, it will be essential to:
    1. Fix the shipping origins and destination points as early as possible;
    2. Ensure the availability of rail and truck shipping casks;
    3. Conduct full-scale testing of casks to be used to transport spent nuclear fuel
    4. Prepare a comprehensive transportation plan that includes the analysis of all needed transport-safety activities in a single document;
    5. Develop responsible criteria for selecting shipping routes;
    6. Develop a sound methodology for evaluating optional mixes of routes and transportation modes; and
    7. Conduct a thorough review of the risks of terrorism and sabotage against spent fuel and HLW shipments, and work with state governments to assure that adequate safeguards are in place prior to shipments occurring.
    8. Employ a tracking system that will provide shipment status information to the states (e.g. location, incidents and impending weather).
- Many recommendations of the NAS "Going the Distance" report are consistent with WGA policy resolutions. Of particular relevance in this context are NAS recommendations regarding organizational structure, acceptance order, transportation mode, routing, and full-scale testing to demonstrate package performance in severe accident scenarios.

[10] In 2005, states from across the country sent Energy Secretary Bodman a set of consensus "Principles of Agreement Among States On Expectations Regarding Preparations for OCRWM Shipments." These can be viewed at: http://www.westgov.org/wieb/reports/07-07-05bodmanltr.pdf